

IN THE CLAIMS:

Please add Claims 12-28 as follows. Note that all the claims currently pending in this application have been reproduced below for the Examiner's convenience.

1. (Unamended) An image stabilizer for an image taking lens device, comprising:
image stabilizing means operative for stabilizing, during shaking of the image taking lens device, the image generated by said image taking lens device;

light quantity control means disposed in the light path of said image taking lens device; and

controlling means for controlling said light quantity control means so as to vary the aperture size of said light quantity control means during the image stabilizing operation performed by said image stabilizing means.

2. (Unamended) An image stabilizer according to Claim 1, wherein said light quantity control means comprises a diaphragm having a plurality of diaphragm blades driven to vary the aperture size, and

wherein said controlling means operates so as to drive said diaphragm blades to reduce said aperture size, during the image stabilizing operation performed by said image stabilizing means.

3. (Unamended) An image stabilizer according to Claim 1, wherein said light quantity control means comprises a liquid crystal device having annular regions coaxial with the optical axis of said image taking lens device, and

wherein said controlling means drives said liquid crystal device so as to reduce the aperture size, during the image stabilizing operation performed by said image stabilizing means.

4. (Unamended) An image stabilizer for an image taking lens device, comprising:
image stabilizing means operative for stabilizing, during shaking of the image taking lens device, the image generated by said image taking lens device;

an image pickup device disposed at the imaging plane of said image taking lens device and having an imaging area which converts an optical image formed by said image taking lens device into electrical signals, said image pickup device delivering as picture signals the electrical signals derived from said imaging area;

light quantity correcting means for correcting the light distribution of the image formed by the pixel signals delivered by said image pickup device; and

controlling means for causing said light quantity correcting means to effect a correction of the light quantity distribution during the image stabilizing operation performed by said image stabilizing means.

5. (Unamended) An image stabilizer according to Claim 4, further comprising a shake sensor for sensing shaking of said image taking lens device,

wherein said image stabilizing means comprises a shake correction lens and an actuator for actuating said shake correction lens,

wherein said light quantity correcting means comprises a gain controller for controlling the gains for the pixels contained in said imaging area of said image pickup device, and


wherein said controlling means controls said gain controller such that said gain controller varies the gains for pixels of said imaging area in accordance with a shake signal from said shake sensor, when said shake correction lens is being actuated by said actuator.

6. (Unamended) An optical apparatus having an image taking lens device, comprising:

a sensor for sensing shaking of said optical apparatus, said sensor outputting a shake signal corresponding to a shaking of said optical apparatus;

a shake correction lens provided in said image taking lens device, said shake correction lens being movable in directions perpendicular to the optical axis of said image taking lens device;

an actuator for actuating said shake correction lens in accordance with the shake signal from said sensor;

 an image pickup device provided on the imaging plane of said image taking lens device, for converting an optical image formed by said image taking lens device into electrical signals and delivering the electrical signals as picture signals;

light quantity correction means for correcting the light quantity distribution of the image to be formed by said picture signals delivered by said image pickup device; and

controlling means for controlling said light quantity correcting means so as to effect a correction of the light quantity distribution when said shake correction lens is being actuated by said actuator.

7. (Unamended) An optical apparatus having an image taking lens device, comprising:

a sensor for sensing a shaking of said optical apparatus, said sensor outputting a shake signal corresponding to the shaking;

a shake correction lens provided in said image taking lens device, said shake correction lens being movable in directions perpendicular to the optical axis of said image taking lens device;

an actuator for actuating said shake correction lens in accordance with the shake signal from said sensor;

an image pickup device provided on the imaging plane of said image taking lens device, for converting an optical image formed by said image taking lens device into electrical signals and delivering the electrical signals as picture signals;

a diaphragm disposed in the light path of said image taking lens device; and

controlling means for performing control so as to vary the aperture size of said diaphragm when said shake correction lens is being actuated by said actuator, such that the aperture size of said diaphragm is smaller when said shake correction lens is being actuated than when said shake correction lens is not being actuated.

8. (Unamended) An optical apparatus having an image taking lens device, comprising:

a sensor for sensing a shaking of said optical apparatus, said sensor outputting a shake signal corresponding to the shaking;

a shake correction lens provided in said image taking lens device, said shake correction lens being movable in directions perpendicular to the optical axis of said image taking lens device;

an actuator for actuating said shake correction lens in accordance with the shake signal from said sensor;

an image pickup device provided on the imaging plane of said image taking lens device and having an imaging area for converting an optical image formed by said image taking lens device into electrical signals and delivering the electrical signals from said imaging area as picture signals;

a gain controller for controlling the gains for the pixels contained in said imaging area of said image pickup device; and

controlling means for controlling, in accordance with the shake signal from said sensor, said gain controller so as to vary the gains for the pixels of said imaging area of

said image pickup device when said shake correction lens is being actuated by said actuator.

9. (Unamended) An optical apparatus having an image taking lens device, comprising:

an image pickup device provided at the imaging plane of said image taking lens device, for converting an optical image formed by said image taking lens device into electrical signals, said image pickup device having a full imaging area and an output imaging area narrower than said full imaging area;

a sensor for sensing a shaking of said optical apparatus and for producing a shake signal corresponding to the shaking;

shake correcting means for effecting a correction of an image shaking by shifting, in accordance with the shake signal from said sensor, said output imaging area to be read out from said full imaging area of said image pickup device;

light quantity correcting means for correcting the light quantity distribution on the image in said output imaging area read out from said full imaging area of said image pickup device; and

controlling means for performing control such that the correction of the light quantity distribution by said light quantity correcting means is executed during the correction of the shaking of the image performed by said shake correcting means.

10. (Unamended) An optical apparatus having an image taking lens device, comprising:

an image pickup device provided at the imaging plane of said image taking lens device, for converting an optical image formed by said image taking lens device into

electrical signals, said image pickup device having a full imaging area and an output imaging area narrower than said full imaging area;

a sensor for sensing a shaking of said optical apparatus and for producing a shake signal corresponding to the shaking;

shake correcting means for effecting a correction of image shaking by shifting, in accordance with the shake signal from said sensor, said output imaging area to be read out from said full imaging area of said image pickup device;

a diaphragm provided in the light path of said image taking lens device; and

controlling means for performing control so as to vary the aperture size of said diaphragm during the correction of the shaking of the image performed by said shake correcting means, said controlling means performing control such that the aperture size of said diaphragm is smaller when the image shake correcting operation is being performed by said shake correcting means than when the image shake correcting operation is not being performed.

11. (Unamended) An optical apparatus having an image taking lens device, comprising:

an image pickup device provided at the imaging plane of said image taking lens device, having an imaging area for converting an optical image formed by said image taking lens device into electrical signals, said image pickup device having an output imaging area narrower than said imaging area and delivering the electrical signals from said output imaging area as picture signals;

a sensor for sensing a shaking of said optical apparatus and for producing a shake signal corresponding to the shaking;

shake correcting means for effecting a correction of image shaking by shifting, in accordance with the shake signal from said sensor, said output imaging area to be read out from said imaging area of said image pickup device;

a gain controller for controlling the gains for the pixels of said imaging area of said image pickup device; and

controlling means for controlling said gain controller so as to vary the gains for the pixels of said imaging area of said image pickup device during the correction of the shaking of the image performed by said shake correcting means.

Please add Claims 12-28 as follows:

12. (New) An image stabilizer for a variable magnification lens, comprising:
means for stabilizing an image produced by the variable magnification lens during shaking of the variable magnification lens;

a first diaphragm disposed in an optical path of said variable magnification lens;
and

control means for controlling said first diaphragm to vary a full-open aperture diameter of said first diaphragm according to a focal length of said variable magnification lens during stabilizing of the image by said stabilizing means.


13. (New) An image stabilizer according to claim 12, wherein said control means provides a control to make the full-open aperture diameter of said diaphragm smaller when said variable magnification lens is on a telephoto side.

14. (New) An image stabilizer according to claim 12, further comprising a second diaphragm, wherein said second diaphragm is an F-number diaphragm which determines an F-number.

15. (New) An image stabilizer according to claim 14, wherein said first diaphragm and said second diaphragm are disposed adjacent to each other.

16 (New) An image stabilizer according to Claim 15, wherein said first diaphragm is controlled by said control means in such a way as to limit an on-axial light flux when said variable magnification lens is on a telephoto side.

17. (New) An image stabilizer according to claim 12, wherein said variable magnification lens has a decentering lens arranged to decenter in a direction perpendicular to an optical axis of said variable magnification lens so as to stabilize an image.

 18. (New) An image stabilizer according to claim 12, further comprising focal length detecting means for detecting the focal length of said variable magnification lens, wherein said control means controls said diaphragm according to the focal length detected by said focal length detecting means.

19. (New) An image stabilizer according to claim 12, wherein said variable magnification lens is a zoom lens.


20. (New) An image stabilizer according to claim 12, further comprising an image pickup device disposed on an image plane of said variable magnification lens and arranged to convert an optical image formed by said variable magnification lens into an electrical signal, and vibration correcting means for correcting vibration of said variable magnification lens by processing the electrical signal.

21. (New) A device comprising a portion of an image stabilizer for a variable magnification lens, comprising:

a first diaphragm disposed in an optical path of said variable magnification lens;
and

control means for controlling said first diaphragm to cause said first diaphragm to limit an on-axial light flux when said variable magnification lens is on a telephoto side.

22. (New) A device according to claim 21, wherein said control means provides a control to make the full-open aperture diameter of said diaphragm smaller when said variable magnification lens is on a telephoto side.

 23. (New) A device according to claim 21, further comprising a second diaphragm, wherein said second diaphragm is an F-number diaphragm which determines an F-number.

24. (New) A device according to claim 23, wherein said first diaphragm and said second diaphragm are disposed adjacent to each other.

25. (New) A device according to Claim 24, wherein said first diaphragm is controlled by said control means in such a way as to limit an on-axial light flux when said variable magnification lens is on a telephoto side.

26. (New) A device according to claim 21, wherein said variable magnification lens has a decentering lens arranged to decenter in a direction perpendicular to an optical axis of said variable magnification lens so as to stabilize an image.